

**CLAIMS (as originally filed and published).**

1. Cell carrier (10) for receiving a biological sample, which has a magnetic element (20),  
**characterized by**
  - 5 - a bottom element (30) which forms a stable support (31) that can be displaced on a solid base surface in at least one direction, and
  - a receiving element (40) on a side of the cell carrier (10) that lies opposite the bottom element (30), wherein the receiving element (40) has a surface (41) for receiving the biological sample, wherein
  - 10 - the receiving element (40) is formed so as to promote adhesion in a predetermined partial region of the surface (41).
2. Cell carrier according to claim 1, in which the bottom element (30) forms a plane support (31).
3. Cell carrier according to claim 2, in which the plane support (31) is formed over  
15 the whole surface or by at least three support points (32).
4. Cell carrier according to claim 1, in which the bottom element (30) forms a profiled support (33) with a predetermined support profile.
5. Cell carrier according to claim 4, in which the support profile forms a section of a cylinder surface.
- 20 6. Cell carrier according to at least one of the preceding claims, in which the bottom element (30) has an adhesion-reducing coating.
7. Cell carrier according to at least one of the preceding claims, in which the receiving element (40) has at least in a partial region at least one of the surface shapes consisting of a plane unstructured shape (41), a plane structured shape  
25 (42), a depression (45) and a cavity (44).
8. Cell carrier according to at least one of the preceding claims, in which the bottom element (30) and the receiving element (40) are arranged one above the other and form a layered structure.

9. Cell carrier according to claim 8, which has a thickness of less than 200  $\mu\text{m}$  and a cross-sectional surface with a lateral dimension of less than 2 mm.
10. Cell carrier according to at least one of claims 7 to 9, in which the receiving element (40) has an edge (47) which is provided with an adhesion-reducing coating.  
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11. Cell carrier according to at least one of the preceding claims, which has a transparent partial region (43).
12. Cell carrier according to at least one of the preceding claims, in which the magnetic element (20) forms the bottom element (30) and/or the receiving element (40) or comprises a separate particle which is bound to the sample (1).  
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13. Cell carrier according to at least one of the preceding claims, in which the magnetic element (20) is formed from at least one material selected from the group consisting of paramagnetic, ferromagnetic and diamagnetic materials.
14. Cell carrier according to at least one of the preceding claims, in which the magnetic element (20) is formed from at least one induction device.  
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15. Cell carrier according to at least one of the preceding claims, in which the magnetic element (20) forms a continuous layer which runs through the cell carrier (10).
16. Cell carrier according to at least one of the preceding claims 1 to 12, in which the magnetic element (20) comprises a number of partial elements (22, 23) distributed in the cell carrier (10).  
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17. Cell carrier according to claim 16, in which the partial elements (22) are arranged at a distance from at least one lateral edge of the cell carrier (10).
18. Cell carrier according to claim 16, in which the partial elements (23) are arranged at least at one lateral edge of the cell carrier (10).  
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19. Cell carrier according to at least one of the preceding claims, in which the magnetic element (20) forms at least one memory cell (24).

20. Cell carrier according to at least one of the preceding claims, which has an outer shape (12) with sections on different sides that are shaped so as to be complementary to one another.
- 5 21. Cell carrier according to at least one of the preceding claims, which has a polygonal or a round outer shape (14).
22. Cell carrier according to at least one of the preceding claims, the outer shape (14) of which is selected in such a way that a plurality of cell carriers (10) next to one another form a flat package without any gaps.
- 10 23. Cell carrier according to at least one of the preceding claims, which has securing elements (12) that are formed by at least one protrusion and at least one recess on the side of the cell carrier (10).
24. Cell carrier according to at least one of the preceding claims, which has at least one supporting element (11) that protrudes from a side of the cell carrier (10).
- 15 25. Cell carrier according to claim 24, in which a number of supporting elements (11) form the bottom element.
26. Cell carrier according to at least one of the preceding claims, which has at least one identification element (13).
27. Cell carrier according to at least one of the preceding claims, which is adapted to receive at least one biological cell (1).
- 20 28. Cell carrier according to at least one of the preceding claims, the surface (41) of which has a lateral dimension that is selected within the range from 10  $\mu\text{m}$  to 1 cm.
29. Cell carrier according to at least one of the preceding claims, which has a height that is selected within the range from 0.5  $\mu\text{m}$  to 2000  $\mu\text{m}$ .
- 25 30. Culture carrier (50) for receiving biological cells, which has a plurality of cell carriers (10) according to at least one of the preceding claims.

31. Culture carrier according to claim 30, in which the cell carriers (10) are arranged next to one another, wherein the cell carriers (10) make contact with one another.
32. Culture carrier according to claim 31, in which the cell carriers (10) are secured to one another.
33. Culture carrier according to at least one of claims 30 to 32, in which the receiving elements (40) of the cell carriers (10) form a flat culture carrier surface (51).
34. Culture carrier according to at least one of claims 30 to 33, in which the receiving elements (40) of the cell carriers (10) form a curved culture carrier surface (52).
35. Culture carrier according to at least one of claims 30 to 34, in which the receiving elements (40) of the cell carriers (10) form a culture carrier surface (53) with steps.
36. Manipulation device (60) for biological samples, which includes:
  - a solid base surface (61) which is adapted for positioning at least one cell carrier (10) according to at least one of claims 1 to 29, and
  - an actuator (70) for exerting a magnetic force on the at least one cell carrier (10).
37. Manipulation device according to claim 36, in which the base surface (61) has a flat shape.
38. Manipulation device according to claim 36, in which the base surface (61) has a curved shape.
39. Manipulation device according to at least one of claims 36 to 38, in which the base surface (61) has a surface structure (80) with protrusions and/or depressions.
40. Manipulation device according to claim 39, in which the surface structure (80) forms at least one shaped element selected from the group of shaped elements

- consisting of free areas (81), channels (82), branchings (83), annular paths (84) and courts (85).
- 5 41. Manipulation device according to at least one of claims 36 to 40, in which two base surfaces (61) are provided, the free surfaces of which face towards one another with a spacing therebetween and are both designed to receive cell carriers.
42. Manipulation device according to at least one of claims 36 to 41, in which the base surface (61) comprises a magnetic or magnetizable material at least in partial regions.
- 10 43. Manipulation device according to at least one of claims 36 to 42, in which the actuator (70) has at least one force element (71, 73-77) selected from the group of force elements consisting of permanent magnets, paramagnets, ferromagnets and diamagnets, electrically excitable magnets and magnetic fluids.
- 15 44. Manipulation device according to claim 43, in which the force element (71, 73-77) can be displaced relative to the base surface (61) by means of a displacement device (72).
45. Manipulation device according to at least one of claims 36 to 44, which comprises a monitoring device.
- 20 46. Method for manipulating biological samples, comprising the steps:
- positioning at least one sample (1) on at least one cell carrier (10), which is arranged such that it can be displaced on a solid base surface (61), and
  - moving the cell carrier (10) with the sample (1) by exerting a magnetic force.
- 25 47. Method according to claim 46, in which a number of cell carriers are positioned next to one another, so that cells (1) and/or cell components on the cell carriers enter into interaction with one another.
48. Method according to claim 47, in which cells (1) move between neighboring cell carriers (10).

49. Method according to claim 47, in which cells (1) and/or cell components on neighboring cell carriers make contact with one another.
50. Method according to claim 49, in which cytological imprinting of cells (1) on neighboring cell carriers (10) takes place.
- 5 51. Method according to claim 50, in which the magnetic force acts on the sample (1) and/or on the cell carrier (10).